

## PREY-STALKING BEHAVIOR OF A THOMISID SPIDER, *Xysticus californicus* Keyserling (ARANEAE: THOMISIDAE)<sup>1</sup>

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**ABSTRACT:** The thomisid spider, *Xysticus californicus* Keyserling, was seen to deliberately stalk and capture individuals of the ant, *Veromessor chicoensis* M. Smith, at three localities in northern California.

*Xysticus (X.) californicus* Keyserling is a common crab spider that ranges from British Columbia to southern California (Schick, 1965). While many thomisids secrete themselves in flowers to await potential prey, others actively pursue their prey (Gertsch, 1939). *Xysticus californicus* is one such active predator. Within a period of a few days, I was able to observe the stalking behavior of this spider at three different sites in northern California.

The first observation site was situated along State Highway 32, 4.4 miles east of its junction with U.S. Highway 99 in the city of Chico, Butte County. This site, at an elevation of about 1100 feet, is oak woodland grading into chaparral. In early evening, 18 June 1979, alate females and males of the harvester ant, *Veromessor chicoensis* M. Smith, were emerging from nests for mating flights. Individuals of both sexes usually climbed up nearby grass blades and took flight shortly thereafter. A few, especially males, milled about on the soil surface amidst the many workers. At 1940 hours PST, an adult female of *X. californicus* was seen at about 10 cm from the periphery of the area occupied by the milling group of ants. She slowly approached to within 3 or 4 cm of the group, near a quiescent male ant. After hesitating for a few seconds, the spider rushed up to the ant, seized it and retreated into the grass, climbed a few cm up a grass stem and began feeding.

Several meters away, at another nest, much the same procedure was utilized by another *X. californicus* female. The ant initially attacked, however, was a large worker. The ant responded to the approaching spider by adopting a threatening posture, facing the spider, with gaping mandibles. The spider immediately withdrew a few cm along the periphery of the area occupied by the ants. She then successfully attacked another smaller worker and disappeared into a clump of grass.

The second site was in Tehama County along State Highway 36,

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approximately 5.8 miles northeast of the junction with U.S. Highway 99. This site, at an elevation of about 550 feet, now consists of open grassland with scattered live oaks. Observations here were made late in the afternoon on 22 June 1979. A foraging column of the harvester ant was crossing the pavement of old Highway 36. At 1905 hours PST, an adult female of *X. californicus* approached the file of ants and halted about 4 cm away. After a few minutes, the column of ants thinned momentarily; the spider darted forward, seized an isolated ant and rapidly retreated about 10 cm. There she halted a few seconds and then moved at a more leisurely pace into a small clump of grass.

A final observation was made on 24 June 1979 along Neal Road, about 6.1 miles northeast of its junction with U.S. Highway 99, Butte County. This site was a grassy clearing in chaparral, at an elevation of about 1000 feet. An adult female of *X. californicus* approached a foraging column of *V. chicoensis* at 1932 hours PST and took an isolated worker ant from the column.

During the period in June when these observations were made, foraging columns and mating flights of another *Veromessor*, *V. andrei* (Mayr), were also studied. This is a larger species of ant than *V. chicoensis* (the sexual forms are much larger) and has monomorphic workers, rather than polymorphic workers. *X. californicus* never attacked or approached *V. andrei*, although both ant species occupied the same sites and have similar periods of activity. Possibly the larger size of *V. andrei* is a deterrent to predation.

*Veromessor* workers lack a functional sting, but, when disturbed, emit a somewhat foul-smelling liquid from the gastric apex. Their powerful mandibles, used to crush seeds, are capable of inflicting serious damage to other arthropods. *V. andrei*, by virtue of its larger size and correspondingly more powerful mandibles, probably is a more formidable opponent than *V. chicoensis*. It seems possible, then, that some individuals of *X. californicus* may be able to discriminate between the two ant species.

According to MacKay (1982), another thomisid, *Misumenops californicus* (Banks), preys upon foraging workers of another harvesting ant, *Pogonomyrmex rugosus* Emery, capturing the ants in vegetation around nests. Holldobler (1976) observed *M. coloradensis* Gertsch capture resting females of *Pogonomyrmex* spp. MacKay (1982) mentions that *Xysticus* sp. preys primarily or exclusively upon *Pogonomyrmex rugosus*. Neither of the authors comments on spider foraging behavior.

It would be interesting to learn more about the prey preferences, if any, of individuals of *X. californicus*. The specimens I observed seemed to be performing a routine procedure.

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The following Opinions have been published by the International Commission on Zoological Nomenclature in the *Bulletin of Zoological Nomenclature*, vol. 40, part 2, on 15 July, 1983:

*Opinion No.*

- 1247 (p. 77) *Dactylopius* Costa, (Nov. 1829) and *Pseudococcus* Westwood, 1840 (Insecta, Homoptera): designation of type species.
- 1248 (p. 81) *Lethocerus* Mayr, 1853 (Insecta, Hemiptera): conserved.
- 1250 (p. 85) *Gyrohypnus* Samouelle, 1819, ex Leach MS, *Xantholinus* Dejean, 1821, ex Dahl, and *Othius* Stephens, 1829, ex Leach MS (Insecta, Coleoptera): type species designated for these genera.
- 1255 (p. 97) *Lespesia* Robineau-Desvoidy, 1863 (Diptera, Tachinidae): designation of type species.

The Commission regrets that it cannot supply separates of Opinions.

R.V. MELVILLE,  
Secretary